

Application No. 10/767,530

Amendment Date February 11, 2008; Reply to Office action of November 2, 2007

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Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (cancelled)

Claim 6 (currently amended): An adaptive image region partition method comprises the steps of:

- a) Input a component labeled image and its associated characteristics for each component;
- b) Perform an adaptive two pass ZOI creation method using the component labeled image and component characteristics to create an adaptive ZOI image wherein the adaptive two pass ZOI creation method applies a distance metric depending on component characteristics.

Claim 7 (currently amended): The adaptive image region partition method of claim 6 wherein inputting a component labeled image and its associated characteristics for each component further comprises the steps of:

- a) Input an input image;
- b) Perform component labeling using the input image to create the component labeled image;
- c) Extract component characteristics such as component type or size.

Claim 8 (currently amended): The adaptive image region partition method of claim 6 wherein the adaptive two pass ZOI creation step further comprises the steps of:

- a) Perform a first pass scan using the component labeled image and component characteristics to create a first pass intermediate adaptive distance image and

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an adaptive shortest distance component label image wherein the adaptive distance image having distance metric depending on component characteristics;

- b) Perform a second pass scan using the first pass intermediate adaptive distance image and the adaptive shortest distance component label image to create an adaptive distance transform image and an updated adaptive shortest distance component label image wherein the adaptive distance transform image having distance metric depending on component characteristics.

Claims 9 - 10 (cancelled)

Claim 11 (currently amended): A cell segmentation method comprises the steps of:

- a) Input a nuclei mask image and its component labeled image;
- b) Input a cell mask image;
- c) Perform nuclei region partition using the nuclei mask component labeled image and a two pass ZOI creation method to create nuclei mask ZOI;
- d) Perform cell region separation using the cell masks and the nuclei mask ZOI to generate cell separated regions wherein the cell mask having the same component label in the nuclei mask ZOIs is considered as one cell region.

Claim 12 (currently amended): An adaptive cell segmentation method comprises the steps of:

- a) Input a nuclei mask image, its component labeled image and component characteristics;
- b) Input a cell mask image;
- c) Perform adaptive nuclei region partition using the nuclei mask component labeled and image and component characteristics to create adaptive nuclei mask ZOI;
- d) Perform adaptive cell region separation using the cell masks and the adaptive nuclei mask ZOI to generate adaptive cell separated regions wherein the

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adaptive cell mask having the same component label in the nuclei mask ZOIs
is considered as one cell region.

Claim 13 (cancelled)

Claim 14 (currently amended): The adaptive cell segmentation method of claim 12 wherein the adaptive nuclei region partition method uses cell size estimate performed by distance transform and averaging cell distance values within a nucleus for distance metrics as the weighting factor for the length function.